

REMARKS

Claims 1-14 are pending. Claim 14 stands withdrawn from consideration as a non-elected invention under a restriction requirement.

Election/Restriction

Cancellation of the non-elected claims will be reviewed upon notification of allowable subject matter.

Claim Objection

Claim 1 has been amended to correct the typographical error identified by the Examiner in Claim 13. Claim 13 has been amended to delete the typographical error, and to make Claim 13 dependent on Claim 1.

Rejections Under 35 U.S.C. § 103(a)

Claims 1-3 and 5-12 are rejected based on the assertion that they are unpatentable over Aich et al. (WO 99/31115) in view of Akeson et al. (US6936433). Claims 1 and 4 are rejected based on the foregoing art and in view of Anazawa et al. (US6136543). Claim 13 is rejected based on the foregoing art and further in view of Li et al. (PNAS, 1991, 88, 26-30).

Claim 1 has been amended to clarify the aspect of the invention that involves the modulation of electrostatic potential across the channel *during* translocation of nucleic acid strands through the channel, with the result that the incorporation of metal ions is either permitted or not *at individual base pairs within a single translocating duplex*. There is no teaching or suggestion in the cited art of this aspect of the invention, discussed for example in the first paragraph of the Detailed Description. This aspect of the invention provides the facility to record alternating patterns of metal ion incorporation within a duplex, so as to facilitate recordal of information in the nucleic acid polymer, as opposed to limiting a duplex to either having or not having metal ions along the entirety of the duplex. With emphasis added, the relevant portion

Application Serial No. 10/511,841

Office Action dated November 2, 2007

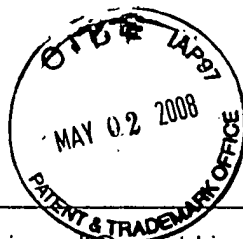
of amended claim 1 reads as follows:

modulating the translocation of first and second nucleic acid strands through a channel between a dissociation medium and a hybridization medium, **while** modulating an electrostatic potential across the channel so as to modulate the incorporation of a metal ion in a nucleic acid duplex as the duplex forms in the hybridization medium, so that if a metal ion is permitted to enter the duplex a metal-containing base pair is formed and if a metal ion is excluded from the duplex a non-metal-containing base pair is formed;

Conclusion

The applicants submit that the claims are in condition for allowance and respectfully request that a timely Notice of Allowance be issued in this case.

Respectfully submitted,



Dowell & Dowell, P.C.

From: Kingwell, Brian [bgkingwell@smart-biggar.ca]
Sent: Friday, May 02, 2008 3:19 PM
To: Dowell & Dowell, P.C.
Cc: Potten, Hayley G.
Subject: RE: Non-final Office action - Lee

Nicole,
A draft is attached, to be completed with a signature line and any other modifications that you view as appropriate.
Regards,
Brian

From: Dowell & Dowell, P.C. [mailto:dowell@dowellpc.com]
Sent: Friday, May 02, 2008 9:48 AM
To: Kingwell, Brian
Subject: RE: Non-final Office action - Lee

Dear Brian,

Thank you for your e-mail. We look forward to receiving the response.

Best,

Nicole

Nicole A. Lyman
Patent Assistant
DOWELL & DOWELL, P.C.

From: Kingwell, Brian [mailto:bgkingwell@smart-biggar.ca]
Sent: Friday, May 02, 2008 12:33 PM
To: Dowell & Dowell, P.C.
Cc: Potten, Hayley G.
Subject: RE: Non-final Office action - Lee

Dear Nicole,
I will have a draft response to you within about 2 hours. It will be in a finalized form, so that relatively little should be required on your end. There will of course be a Petition for an extension of time, which I will leave to you.
Regards,
Brian

From: Dowell & Dowell, P.C. [mailto:dowell@dowellpc.com]
Sent: Thursday, May 01, 2008 8:34 AM
To: Kingwell, Brian
Cc: Ghaissarnia, Nazanin
Subject: RE: Non-final Office action - Lee
Importance: High

5/2/2008

Application Serial No. 10/511,841

Office Action dated November 2, 2007

of amended claim 1 reads as follows:

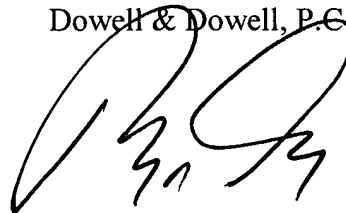
modulating the translocation of first and second nucleic acid strands through a channel between a dissociation medium and a hybridization medium, **while** modulating an electrostatic potential across the channel so as to modulate the incorporation of a metal ion in a nucleic acid duplex as the duplex forms in the hybridization medium, so that if a metal ion is permitted to enter the duplex a metal-containing base pair is formed and if a metal ion is excluded from the duplex a non-metal-containing base pair is formed;

Conclusion

The applicants submit that the claims are in condition for allowance and respectfully request that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

Dowell & Dowell, P.C.



By:

Ralph A. Dowell, Registration No. 26,868

Date: *May 2, 2008*

DOWELL & DOWELL, P.C.
Suite 309, 1215 Jefferson Davis Highway
Arlington, VA 22202
Telephone - (703) 415-2555
Facsimile - (703) 415-2559
E-mail - dowell@dowellpc.com